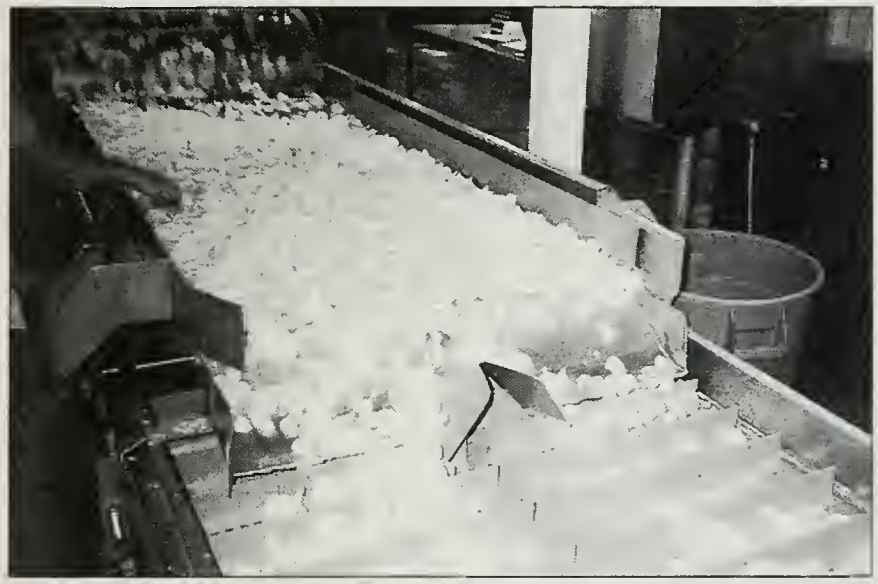
Ontario

The Hostess-Frito Lay Company

Cambridge, Ontario

"In our very competitive market, we at Hostess-Frito Lay are always looking for opportunities to reduce our operating costs. The green industrial analysis helped us to find ways to achieve this goal. The analysis gave us specific and detailed recommendations to minimize waste and save on resources and utilities."

Alain Bédard
Technical Manager,
The Hostess-Frito Lay Company



Hostess-Frito Lay is a major manufacturer of snack foods.

THE COMPANY

Hostess-Frito Lay produces about 32,000 tonnes of snack foods such as popcorn, extruded cheese-flavored snacks and potato, tortilla and multi-grain chips each year at the company's plant in Cambridge. The plant, which opened in 1955, is one of a network of 40 such plants in North America.

CHALLENGE

The Cambridge plant is located in an area of south-west Ontario where water costs are significantly higher than in other parts of Canada. The company pays a sewer surcharge to the Regional Municipality of Waterloo because of the solids and biological oxygen demand in the effluent which goes into the sewer.

The company already audits its solid wastes. Most of the solid food wastes are sent to farms as soil enhancer or as animal feed. Hostess-Frito Lay recently started to recover the starch from its potato-washing waste water.

In 1994, the Ministry of Environment and Energy and Hostess-Frito Lay retained the services of the Ortech Corporation, of Mississauga, Ont. to conduct a resource conservation analysis of the Cambridge plant. The sub-contractor was Wastewater Technology Centre, of Burlington, Ontario.

OPPORTUNITIES

Although Hostess-Frito Lay had been pursuing "green" opportunities in the plant, the company was looking for further savings. The analysis focused on the following areas:

* reducing the amount of water used;
* improving energy efficiency;
* removing more solids from the waste water.

RECOMMENDATIONS

The final report of the analysis of Hostess-Frito Lay made 11 recommendations. The seven most important recommendations suggested that the company:

* install a dissolved air flotation system to remove suspended solids, fat, oil and grease from the plant's liquid effluent;
* install anaerobic treatment for waste water;
* retrofit the plant's compressed air system;
* install variable frequency drives on the oil circulation pumps which are used to circulate the hot oil for frying;
* install a high-pressure, low-volume wash system for cleaning up the plant;
* recover the heat from the exhaust of two potato chip fryers;
* retrofit the lighting to improve its efficiency.

The report identified several technologies which would open up new opportunities for business development in the food sector. These technologies included a natural gas engine-driven air compressor, natural gas co-generation of electric power and heat and an anaerobic digester for liquid effluent.

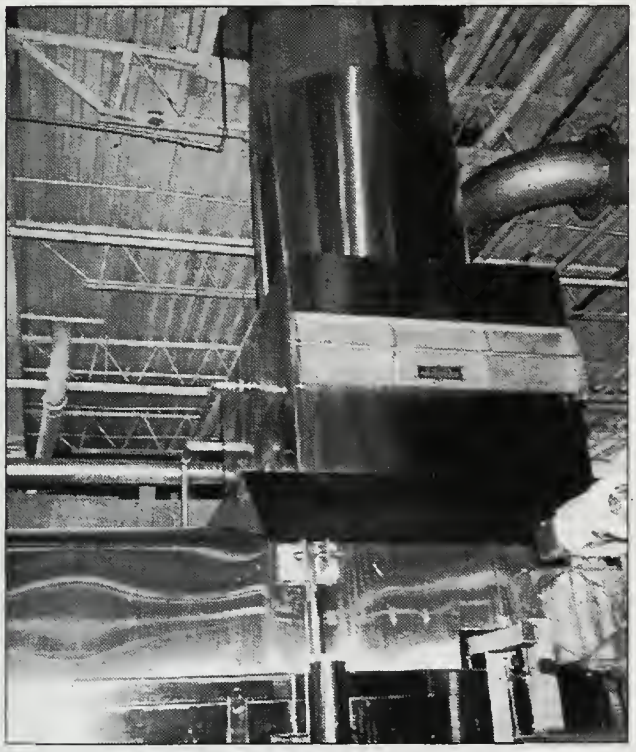
POTENTIAL SAVINGS

The green analysis of Hostess-Frito Lay identified the following potential savings from the recommended improvements:

	Potential annual savings	*Potential savings as per cent of total plant use or production*
✲ Electrical energy	1,560 MWh	14
✲ Electrical demand	225 kW	12
✲ Natural gas	429,000 m^3	5
✲ Water	24,000 m^3	4
✲ Liquid effluent, liquid load	24,000 m^3	4
✲ Liquid effluent, mass load	1,350 tonnes	98
✲ Operating costs	$ 560,000	

These improvements would require capital spending of about $1.99 million.

The final report also recommended the installation of a natural gas co-generation system, which would cost about $1.13 million but would save about $221,000 per year in operating costs. The report also suggested the company consider a natural gas engine-driven air compressor.



The final report recommended the installation of heat recovery equipment in the exhaust of potato chip fryers.

PARTNERSHIP IN POLLUTION PREVENTION AND RESOURCE CONSERVATION

Industrial companies located in Ontario may participate in ministry/industry programs that will help them:

- ✲ use energy and water more efficiently;
- ✲ reduce, reuse and recycle solid waste;
- ✲ reduce or eliminate liquid effluents and gaseous emissions.

Equipment and services supply companies can benefit from the information provided on technologies identified for business development.

FOR FURTHER INFORMATION, PLEASE CONTACT

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MINISTRY OF ENVIRONMENT AND ENERGY PROGRAMS

For information on Ministry of Environment and Energy assistance to industry, please contact the Industry Conservation Branch at (416)327-1443, Fax (416)327-1261, E-Mail MARKOWTO@EPO.GOV.ON.CA

This project profile was prepared and published as a public service by the Ontario Ministry of Environment and Energy. Its purpose is to transfer information to Ontario companies about findings and recommendations of a resource conservation and environmental analysis conducted by a consulting engineering firm at an industrial plant in Ontario.

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